Exploring How Logistics Activities Can be Used to Motivate Consumer Cross-Buying Behaviors Across Omnichannel Fulfillment Channels

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Author: Lauren Whiteford

Thesis Committee:

Dr. A. Michael Knemeyer, Advisor

Dr. Andrea Prud'homme

Dr. Walter Zinn

Abstract

As e-commerce continues to become an increasingly integrated part of consumer's lives, companies will be challenged to adapt their traditional retail approaches to changes in shopping behaviors. For many companies, the move to a more online-centric buying environment will involve an expansion of omnichannel distribution alternatives, wherein consumers can select logistics delivery methods that best fit their preferences at any given time. These logistics delivery methods will be offered through a digital interface but could involve delivery directly to the consumer's home or to a conveniently located brick-and-mortar location. All the while, there continues to be targeted efforts to encourage consumers to buy more than their initial intentions, commonly referred to as cross-buying. Consumer cross-buying activities have been an important source of incremental revenue for companies when consumers make purchases in their brick-and-mortar stores. However, little is known regarding how expanding logistics fulfillment options will affect consumer behaviors when purchases increasingly involve online components.

There are many factors that influence both what fulfillment channel consumers will utilize and whether or not they influence the propensity to buy more. This research focuses on the omnichannel distribution methods of At-Home Delivery, Buy Online Pickup In-Store (BOPS), and Curbside Pickup, as well as the potential logistics characteristics of the cost of fulfillment, time considerations, and physical location of product delivery. In addition, this research seeks to quantify consumer's opinions regarding efforts to promote cross-buying and their current methods and tendencies in shopping. A vignette-based experiment was utilized to address these research questions, while also analyzing how buying behaviors and delivery channels are impacted by demographics, such as gender and self-identified buying profiles, and any prior knowledge and/or usage of the different fulfillment opportunities. Conclusions and

suggested implications built from the results of the experiment were constructed to help provide insights for logistics managers moving forward into an increasingly omnichannel world.

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Introduction

According to *Wallace* (2018*)*, the primary reasons the Gen-Z population (those born after 1997) chooses to buy online is for convenience, lower price, and free shipping. Meanwhile, their least favorite things about shopping online are waiting for the product, paying for shipping, and experiencing stock outs. Taking this into consideration, it is crucial that companies pay attention to not only the products they sell, but also the associated basket of services they provide to their customers. Rigby (2011), wrote on the future of shopping, detailing the need for companies to integrate both a digital and physical presence to survive, as customers want the breadth of product information provided online yet the service levels received inside a store. As the omnichannel world grows, companies are seeing more use of at-home delivery and the newer, buy online pickup in-store (BOPS) and curbside pickup fulfillment methods. Each of these new logistics fulfillment approaches changes the ways customers interact with the in-store retail environment. As such, there is a need to understand how this may influence their buying behaviors that have traditionally involved active shopping within a store environment.

Current Industry Adoption and Omnichannel Modes

Walmart, an early adopter of the BOPS fulfillment method, prefers this approach because it is a way to get more customers physically in the store, where margins are more advantageous (Tuttle 2011). Even during the holiday season in 2019, retail stores witnessed a rise in the use of the BOPS model due to customers procrastinating their gift buying. Walmart also was a frontrunner in adopting curbside pickup, viewing this fulfillment method as a means to capture purchases made by younger shoppers, who have a different take on price, value, and convenience (Danzinger 2019). For another big-box retailer, Target, BOPS is seen as a more sustainable

model where consumers take over last-mile delivery which reduces overall touch points, plus opens up the possibility for consumers to purchase more products once they arrive to pick up the product (Thomas 2020). Lastly, it is important to note that customer usage of all three of these omnichannel delivery methods has increased due to the current COVID-19 pandemic; however, curbside pickup and BOPS are gaining popularity more notably. While research finds that consumers miss the physical act of leaving home to shop in-store, a recent survey by Forrester stated that 42% of consumers didn't plan to re-enter store premises even when they are allowed to (Alcantara 2020). These changing consumer buying behaviors are forcing companies to get creative and build up their sidewalk services and window displays in order to entice customers to enter their stores and drive revenues from in-store traffic.

Cross-Buying and its Relevance for Businesses

As the number of logistics omnichannel fulfillment methods increases in both breadth and popularity among consumers, there is an increasing degree of disparity in profits, as each fulfillment method results in some level of tradeoff between revenues and costs. For companies this has introduced the increasing need for innovation and creativity in order to drive additional sales from their customers. One popular strategy for addressing this need is through the act of promoting cross-buying behaviors by consumers. By definition, cross-buying refers to the notion that consumers purchase additional products and/or services from different categories from the existing provider, in addition to what they already intended to purchase (Kumar 2008). Cross-buying development can be carried out via in-store or online promotions (verbally or written), suggested/related items based off of artificial intelligence, and more. It should be noted that cross-buying, while being somewhat similar, is not the same as impulse buying. Although both

ideas involve techniques to increase consumer purchase quantities, impulse buying is more unplanned. For reference, impulse buying is defined by Aragoncillo & Orús (2018) as an unplanned purchase that is accompanied by an urgent desire or strong positive feelings, and typically involves smaller, convenience items that don't require much thought or deliberation before purchasing. Cross-buying occurs with more intent by extending the number of product categories a shopper is purchasing from. Done correctly, cross-buying can encourage an increase in sales in different product categories and elicit a sense of trust in the company. This is due to the fact that curated recommendations feel personal to each shopper, which sparks an emotional connection to the supplier.

This research aims to provide a deeper understanding of the patterns of cross-buying and logistics omnichannel fulfillment for the college-aged consumer demographic, thus contributing valuable information and data for companies regarding what prompts young consumers (who are usually the most cost conscious) to purchase more and exploring how they prefer to shop. Within the research, potential patterns according to gender, specialization area of study, and type of living environment will be explored, as well as an examination of past behaviors regarding cross-buying. This will provide data as to how firms hoping to maximize both the efficiency of their supply chain and increase their profit can direct resources towards designated logistics omnichannel activities without inadvertently alienating their customer base.

Literature Review

The two prominent research streams this study builds upon are those focused on logistics omnichannel strategy and consumer buying habits. In conducting the literature review of the logistical determinants among BOPS, at-home delivery, and curbside pickup, three pertinent and distinctive factors emerged as being important for influencing consumer buying tendencies. These include but are not limited to 1) a representation of in-store product availability online; 2) the cost of delivery; and 3) the time it takes to receive the product(s). Additionally, with the increasing prevalence of data analysis and artificial intelligence software, it is easier than ever to indirectly persuade/tempt customers to purchase more than they initially intended to, the activity known as cross-buying. Existing literature has examined BOPS, at-home delivery, and curbside pickup separately but the three have not been combined and researched together with respect to the college-aged demographic in particular, nor has cross-buying been factored in as an outcome resulting from manipulations of logistics omnichannel fulfillments options. Therefore, this research hopes to contribute to the extant literature by answering the questions of how differences in logistical omnichannel fulfillment methods can impact a consumer's buying mindset and potentially increase their tendency to cross-buy additional items.

Influence and Past Research on Delivery Cost, Tangibility, and Monetary Incentives

To further analyze the logistical factors that may drive overall propensity to cross-buy, prior research indicated useful correlations among a variety of conveniences. One of the biggest conveniences examined in this research centers on the concepts of 'access convenience', 'transaction convenience', and 'possession convenience' defined by Jiang et al. (2013) as including 'timeliness', 'in-store availability', and 'delivery conditions', respectively. These three

conveniences can also be considered situational factors, each directly impacting a point in omnichannel retailing. Kim et al. (2017) looked at situational factors and products that could determine a buyer's intention to use BOPS and found that consumers are attracted to this method because of its transparency, non-existent delivery fee, and the provided security for high involvement items. Chaterjee (2010) details both the causes and consequences of using BOPS and notes that this shopping style attracts two different types of customers: those who want to save on shipping costs and those who want to save on time.

Gallino and Moreno (2013) published an extensive study on the impact of providing information on inventory availability. Through their experiment, they found that when inventory information is available through BOPS, there is an increase in the store's perceived reliability and the probability that customers will visit the store, rather than chose to utilize at-home delivery. Additionally, their control group of stores who did not implement BOPS experienced a decrease in sales. Studies have also been conducted that examine showrooming (when a customer visits a store to examine a product before returning home to buy it online) and its effect on both consumer buying patterns and store perceptions. Gao and Su (2017) note the advantages and disadvantages for both physical and virtual showrooms. In summation, their research states that a combination of both methods is best for customer satisfaction, as it appeases a consumer's need for value certainty and availability of information through timely updates in inventory and tangible product quality evidence for the consumer. This is further supported by Accenture in their 2014 report on omnichannel, "Today's consumers demand absolute guarantees that the product is available, rapid picking and notification alerts, pay at point of pickup, and alternative pickup locations".

An In-Depth Look at Delivery Methods

As Lewis (2006) found, a free shipping policy was the most effective method in terms of firm customer acquisition. It is no surprise that when shipping is free and delivery time is relatively short, consumers will be more willing to use at-home delivery. Huang et al. (2019) reinforce this in their study, stating, "When the perceptions of minimum order threshold for free shipping are low and delivery timing is short, consumers report positive value perceptions, hence increasing perceived threshold free shipping fairness". Consumer perceptions of time are also a critical area to study. Hornik (1984) notably states that individuals tend to overestimate passive waiting time when comparing actual to perceived time passed. This is crucial in consideration of scenario formulation, because if a consumer chooses at-home delivery and the guarantee is 2-days, they will be passively waiting, and thus the time passed will seem much longer.

Further highlighting the importance of fulfillment services, Tokar et al., (2020) formulated data that supports questions surrounding cost and quality of service. In recent years, the retail industry has seen a shift in popularity to e-commerce sales, compared to the traditional brick-and-mortar in-person focused shopping of the past. However, with this switch comes intense pressure to have high quality fulfillment performance, with the benchmark being Amazon and their services. The cost of doing so is either absorbed by the retailer or passed on to the consumer, though the latter is not preferable as consumers often do not want to pay more for convenience. The results of their research indicated that while consumers clearly prefer higher fulfillment service, they are not willing to pay more for it. Additionally, a high fulfillment service price has a negative impact on purchase satisfaction and future buying behavior. As it relates to the current study, it is hypothesized that this characteristic of consumers will prove to be no different. However, the promise of free or low-cost shipping may also incentivize

consumers to cross-buy, which in turn could offset the heavy burden of operational costs that the retailer would normally bear.

The National Retail Federation (2019) has released a statement that highlights the purpose of this research and one of the potential benefits to companies of exploring these implications: “If we can get their purchase to the store, they’ll come pick it up if that’s what it takes to avoid a delivery charge. And once they are in the store, they are very open to seeing what else the retailer has to offer”. With 65% of consumers looking up free shipping thresholds before shopping and 70% of those who have used BOPS doing so for low costs and convenience, it is clear that gathering more insights on consumer’s determinants to select a given shopping and logistics omnichannel delivery method are of great benefit to retailers and to college-age consumers who may not be aware of the benefits of each method.

An In-Depth Look at Cross-Buying

To culminate the current study of at-home delivery, BOPS and curbside pickup, the overall intention of this investigation is to see how these three logistics omnichannel fulfillment methods and certain convenience determinants will influence consumer’s propensity to cross-buy. Cross-buying is the total number of additional different product categories that a customer has purchased from a firm from the time of first purchase. For managers, this is a critical touchpoint to increase consumer’s trust with the brand, but also drive awareness by encouraging them to purchase across different categories of the company’s offerings. Kumar et al., (2008) observed that cross-buying comes with higher perceived risk to the customer. In order to mitigate this risk and see successful cross-buying implementation, it is important that companies promote familiarity with products and provide consistent positive experiences to build credibility and trust

with the consumer. Within the current research study, the familiarity and trust elements are already created in order to distinguish the true determinants of cross-buying (time convenience, financial implications, and availability information) and identify how these logistics omnichannel fulfillment methods can boost sales and retention.

Cross-buying and its relationship to distribution methods has not been explicitly tested, but research from Zhu and Wang (2018) focused on recommendations and factors that directly influenced consumer decision-making. Thus, their findings are applicable to the hypotheses developed in the current study. From their research, they establish several conclusions, including: 1) one-stop shopping convenience positively influences choice confidence in cross-buying; 2) when the recommended product is suitable, artificially controlled cross-recommendation is a useful piece of persuasive information to promote cross-buying; and 3) price advantage has a positive effect on cross-buying. In this study, the aim is to expand upon these findings and apply their outcomes to include the tested fulfillment methods as well. At-home delivery, BOPS, and curbside pickup demonstrate similarities and differences that may also influence consumer's propensity to cross-buy.

A key demographic that, based on past research, will show significant differences in propensity to cross-buy, time to process advertisements and promotions, and preferred method of shopping is gender. Tifferet and Herstein (2012) found through their literature review of gender differences in consumer studies, women process information in advertising in a more detailed manner than men, as well as have been shown in some cases to make more impulsive purchases. They grounded their research in evolutionary theory of men and women, citing women mainly as the gatherers of nomadic groups and men primarily as the hunters of the group. Present day in-store shopping can be loosely compared to that of foraging, rather than hunting, and therefore

women would be more likely to find pleasure in the act of shopping compared to men. Women in this study scored higher in hedonic consumption, or facets of consumer behavior that relate to sensory and emotive aspects of product experience, which has been related back to impulse buying. Once again referring back to evolutionary roles, men taking on the role of hunters required precise timing, and therefore it was hypothesized that men would report lower level of impulsive behavior than women. After conducting their experiment, they found that women answered in a pattern that indicated higher levels of hedonic consumption and impulse buying. However, it should be noted that impulse in this study was viewed as a general tendency, and men have reported higher impulsive behavior in other studies for some shopping items such as electronics.

Gender also plays a role in the relationships among shopping and one's motives and considerations in this process. The selectivity hypothesis states that females are more likely to make decisions based on a thorough and complete processing of all information, whereas males are likely to make decisions based on selective information processing, or well-developed and easily accessible information. In an online setting, male consumers showed favoritism towards a website when that site had pleasure invoking cues, such as abundant graphics. Female consumers favored a site when there was more textual content surround product that helped to create mental imagery on why the product is worth purchasing (Kim et al., 2020).

For individual subjects, this research study may expose them to a new way of online ordering, as BOPS and curbside pickup are rapidly gaining popularity among retailers and consumers, yet still don't have the name recognition, usage rates and trust that at-home delivery possesses. For companies seeking to optimize or expand their omnichannel fulfillment options, understanding the college-age demographic could be key to increasing awareness and reach. This

study fills a gap among current logistics omnichannel fulfillment and cross-buying literature and helps managers to answer the question: *How do we get consumers to feel comfortable and motivate them to buy more of our products?*

Hypotheses

Hypothesis 1: College-aged consumers are more likely to cross-buy when the purchase also enables them to gain free shipping.

Consumers have a higher propensity to buy more when they know they will be reaching a threshold to gain something of benefit, which in this comparison, is free shipping. Huang et. al (2019) researched that when the perceptions of the threshold to receive free shipping are low and speed of delivery is fast, consumers report positive perceptions towards purchasing more in order to reach that threshold. Therefore, it is hypothesized that those who are offered a chance to gain free shipping will cross-buy in order to receive this outcome.

Hypothesis 2: College-aged consumers are more likely to cross-buy when the purchase also enables them to gain a time-saving service.

Consumers have a higher propensity to cross-buy when they are aware that they will be reaching a threshold to gain something of benefit, which in this comparison, is a time-saving service. Chaterjee (2010) detailed that those who want to save on time are key participants in BOPS. However, this is hypothesized in this experiment to include time-saving services in general, in that saving time throughout the entire process will increase the likeliness of spending that energy in browsing other potential products to purchase.

Hypothesis 3: College-aged consumers are more likely to cross-buy when the purchase also enables them to interact with the product versus only seeing it online.

Consumers prefer the tangibility and visibility of a product, and having these traits makes them more likely to cross-buy. According to Gallino and Moreno (2013), when inventory information is available through BOPS, this increases a store's perceived reliability. Additionally, BOPS invites tangible interaction in a brick-and-mortar setting, which helps with

creating additional value certainty. Both value certainty and inventory information are critical factors in making consumers feel more comfortable to purchase more than initially intended.

Hypothesis 4: High impulse college-aged consumers are more likely to cross-buy in all scenarios as compared to low impulse college-aged consumers.

According to Aragoncillo & Orús (2018), high impulse consumers are those who are more likely to have strong urges or desires to purchase additional products than were originally intended. Additionally, participants from their experiment who perceived themselves as impulsive consumers in the offline channel (i.e., a brick-and-mortar store), also perceived themselves to be impulsive in the online channel. Therefore, this same logic may be used to support that college-aged consumers who are classified as high impulse will be more likely to cross-buy than their lower impulse counterparts.

Hypothesis 5: Female college-aged consumers are more likely to cross-buy in all scenarios as compared to male college-aged consumers.

Hypothesis 5 is supported by evidence of past research on gender and impulse decision-making from Tifferet and Herstein (2012). From their experiment, it was concluded that women both enjoy the process of shopping and spend more time processing advertisements and promotions. Additionally, their study found that women were more likely to purchase general shopping items impulsively compared to men. Therefore, this logic may be used to support the claim that female college-aged consumers will be more likely to cross-buy.

Methodology

Overview

The purpose of this study is to determine the propensity to cross-buy and which logistics omnichannel factors matter when purchasing products among the college-aged demographic. This was done by using an online vignette scenario-based experiment, where participants are placed in a situation where they are purchasing a sweatshirt and then asked if, based on the delivery method manipulation, they would be willing to cross-buy an item that they had also been considering. After this, participants would then be asked how often they purchase more items than intended and what type of shopper they self-classify as, followed by demographic questions such as gender identity, declared specialization of study, and housing situation. Finally, participants will be asked about their relative knowledge of, and opinion on, the three described logistics omnichannel fulfillment methods.

Subjects

This experiment was administered to students at The Ohio State University Fisher College of Business. The subjects were 503 students who received this study, and of this number, 312 started the survey (62%). Of these, 261 students (83.7% survey completion response rate) submitted a valid and complete response, of which 39% were female and 55% were male, with the remaining percentage attributed to those who did not wish to answer or identified as a gender other than male or female. This reflects the undergraduate student population of the Fisher College of Business, and therefore there is no apparent gender-based non-response bias. In the interest of simplicity and a diverse pool of data, each student received only one condition and

manipulation, and an attention check was included to ensure adequate effort/focus was expended by the subject.

Procedure

Participants completed a sixteen-question experiment administered through the online platform Qualtrics. At the beginning of the experiment, participants were presented with a consent form outlining that they would be given an online shopping scenario and asked questions regarding that scenario, and then at the end of the experiment they would be asked non-identifying demographic questions.

There were six distinct manipulations of this logistics omnichannel fulfillment experiment. They were designed to change both the method of distribution (BOPS, at-home delivery, or curbside pickup) and logistical determinants that may cause disturbances in the process (time, cost of shipping/delivery, and location/tangibility of pickup). See Table 1 for descriptions of the six experimental conditions. Each experiment included the same shopping vignette, with the method of delivery and the logistics omnichannel fulfillment factor changing in each condition.

At-Home Delivery (Cost Attribute)	**Curbside Pickup (Time Attribute)**	**BOPS (Location Attribute)**
Free shipping (Experiment **1**)	"Fast pass" pickup included in purchase price (Experiment **3**)	Purchasing baseball hat in-store (Experiment **5**)
$10 shipping fee, unless total surpasses $50 (Experiment **2**)	"Fast pass" pickup not included in purchase price (Experiment **4**)	Purchasing baseball hat online (Experiment **6**)

Table 1: Experiment Conditions

Breakdown of Experiments

The experiment was broken into eight sections. The first section contained a short vignette which outlined the online shopping scenario. The characteristics of the online shopping scenario eliminated any sense of doubt by firmly stating the intention of the purchase. Additionally, the context of the scenario was designed so that it would feel familiar to the participant by reenacting a plausible shopping purchase. This section contained a picture for visual reference with no assigned questions. The following is sampled below for the Free Shipping condition.

Thank you for your participation in this shopping pattern experiment. You will be asked to read a vignette pertaining to online shopping and cross-buying behaviors in regard to the purchase of a new game day sweatshirt.

You have just moved back to campus to begin the new school year and want to buy some apparel to represent Ohio State. You have considered buying a variety of products, such as sweatshirts, hats, and t-shirts, but ultimately chose to buy a scarlet and grey hoodie. You have decided to buy your sweatshirt from Varsity Where, a local college apparel retailer via their website.

The price of the sweatshirt is $40.

The second section was designed to prompt the participant with the three definitions of the delivery methods. Each participant, regardless of their specific manipulation, had all of the definitions so that they could properly answer the questions at the conclusion of the experiment as to whether or not they have experience with each of the methods. This section also contained no questions and is sampled below.

Among the questions you will be asked, you will find the following terms: Buy Online Pickup In-Store, At-Home Delivery, and Curbside Pickup.

Buy Online Pickup In-Store (BOPS): *BOPS refers to purchasing a product through an online store and collecting it at the brick-and-mortar store at a later time. Stores will either pull the product from their current inventory or have it shipped in from another location and therefore the typical time for pickup availability is 2-24 hours. For this experiment, assume that you must enter the store to pick up your product and can only do so during regular store hours.*

At-Home Delivery: *At-home delivery refers to purchasing a product through an online store and receiving it at your place of residence.*

Curbside Pickup : *Curbside pickup refers to purchasing a product online to be picked up at a store location during a specified time slot. Different from BOPS, curbside pickup does not require entering the store to collect purchases, but rather they will be brought out to the buyer's car upon delivery.*

The third section was the first portion of the experiment that includes questions for the participant. This is where the six different experiment conditions change. This included a short description of a buying opportunity to purchase a baseball hat. The participant would be told that they were previously interested in purchasing the hat, and then, depending on the presented situation, would be asked to rank how likely they would be to make that additional purchase of the hat. Because each description within this section differs, all six manipulations will be sampled below.

Free Shipping (Experiment 1)

Upon putting the sweatshirt in your online cart, you are notified that you can ship the product to your place of residence at no additional cost.

At check out, you are also asked if you would like to purchase related items that other customers have bought with this sweatshirt. Among these items, you spot a baseball hat that you have also been interested in buying that is available for $20.

If you choose to purchase the hat, you will still receive free shipping on your order.

$10 Shipping Fee (Experiment 2)

Upon putting the sweatshirt in your cart, you are notified that you can ship the product to your place of residence for a ***$10 shipping fee.***

At check out, you are also asked if you would like to purchase related items that other customers have bought with this sweatshirt. Among these items, you spot a baseball hat that is available for $20.

The free shipping threshold is $50. As a reminder, the price of the sweatshirt is $40, therefore purchasing the hat would upgrade your order to free shipping.

Curbside "Fast Pass" included in purchase price (Experiment 3)

Your plan is to buy the sweatshirt online and pick it up via curbside delivery at the Varsity Where store using your elite membership. As part of this membership, you have access to a "fast pass" option. This allows you to bypass the curbside pickup line to get your order faster and at a specific time of your choosing during their regular hours of operation.

At check out, you are asked if you would like to purchase related items that other customers have bought alongside the sweatshirt. Among these items, you spot an Ohio State baseball hat that you have been interested in available for $20. If you choose to purchase this hat, this would also be included in the "fast pass" option.

Curbside "Fast Pass" not included in purchase price (Experiment 4)

Upon putting the sweatshirt in your online cart, the Varsity Where store tells you that your order will be available for curbside pickup in 1-3 days and with a limited set of pickup time options, which may include a waiting period once at the store.

Varsity Where offers an elite membership with a "fast pass" option. This allows you to bypass the curbside pickup line to get your order faster and at a specific time of your choosing during their regular hours of operation. At check out, you are asked if you would like to purchase related items that other customers have bought with this sweatshirt. Among these items, you spot a baseball hat that is available for $20. If you purchase this hat, you would reach a threshold that would allow a free trial to the elite membership and access to the "fast pass" option.

BOPS, Buying Hat In-Store (Experiment 5)

Upon putting the sweatshirt in your cart, you are notified that you can ship to the local Varsity Where store and will be able to pick it up in-store using the BOPS method. When you arrive at the store, you notice that there is an Ohio State baseball hat that you have been interested in that is available for $20. If you purchase the hat while in the store, you will receive $5 off of the purchase.

BOPS, Buying Hat Online (Experiment 6)

Upon putting the sweatshirt in your cart, you are notified that you can ship to the local Varsity Where store and will be able to pick it up the same day you order the product using the BOPS method. You have also been looking at Ohio State baseball caps online, which are available for $20. Varsity Where is offering $5 off your total if you add the baseball hat to your online order, which will also be available at the time you pick up the sweatshirt.

The follow-up question to each of these manipulations is a likert scale regarding whether or not they would purchase the hat. It is as follows:

1. *On a scale from 0-10, how likely are you to purchase the baseball hat with your sweatshirt? (Scale of 0-10 From Not at all likely to Extremely likely)*

The fourth section consisted of a manipulation and realism check. This serves to ensure data accuracy and that the participant understands the concepts at the heart of the experiment. Below are the questions from the Free Shipping condition.

2. *How did you purchase the sweatshirt?*
    a. *Bought online*
    b. *Bought during a visit to a store*
    c. *Bought through a catalog*

3. *Does this seem like a realistic scenario?*
    a. *Yes*
    b. *No*

The fifth section contained a set of questions focused on providing information on the participants' tendency to cross buy online vs. in-store, as well as opening responses for what prompts them to do so. These four questions attempted to highlight if seeing a product in person would increase or decrease the likelihood of cross-buying. Additionally, the text box presented the opportunity to collect data as to what catches the attention of a shopper (i.e., coupons, salesperson). Below is this section presented in all forms:

4. *On a scale from 1-10, how often do you make additional purchases beyond what you intended to buy ONLINE? (scale of 1-10 From Not at all often to Extremely often)*

5. *What prompts you to make additional purchases online? (text box)*

6. *On a scale from 1-10, how often do you make additional purchases beyond what you intended to buy IN-STORE? (scale of 1-10 From Not at all often to Extremely often)*

7. *What prompts you to make additional purchases in-store? (text box)*

Section six consisted of two questions focused on uncovering what type of shopper each participant was and reinforcing the data behind whether or not being physically in-store increases cross-buying tendencies. Below is this section which is consistent in each of the manipulations:

8. *When I think about how I shop:*
    a. *I tend to do a lot of in-store shopping (Scale of 1-5 from Very Untrue of Me to Very True of Me)*

    b. *I tend to do a lot of online shopping (Scale of 1-5 from Very Untrue of Me to Very True of Me)*

    c. *I tend to buy more than what is on my shopping list (Scale of 1-5 From Very Untrue of Me to Very True of Me)*

9. *You will now read a brief definition of 8 types of shopper profiles. Please select **one** option that relates best with you.*

    ***1**. **Bargain Hunter:** Prone to using coupons and shopping sales; Not after a particular item or loyal to a specific brand.*

    ***2. Browsing Customers:** Not shopping for a specific item and usually looking for an experience.*

    ***3. Showrooming Customers:** Testing products in person only to go home and buy them online.*

    ***4. Impulse Shoppers:** Make unplanned purchases based on items that appeal to them in the moment.*

    ***5. Mission-Driven Buyers:** On the hunt for a very specific product, or have a list of what they want.*

    ***6. Indecisive Shoppers:** They are looking to make a purchase, but are hesitant to do so because of price, information overload, or not having enough information.*

    ***7. Educated Buyers:** Always have an idea of what they want to buy; read reviews, price shop, and conduct research beforehand.*

    ***8. Loyal Customer:** Very particular to one type of store; come back again and again.*

The seventh section was a demographics section which aimed to collect key demographic factors that could potentially influence consumer cross-buying decisions and reaction to logistical omnichannel fulfillment methods. Below is this section which is consistent across each of the manipulations:

10. What is your age?
- *a. 18 and under*
- *b. 19-22*
- *c. 22 and up*
- *d. Prefer not to answer*

11. How would you describe your gender?
- *a. Male*
- *b. Female*
- *c. Prefer to self-describe as (please specify):*
- *d. Prefer not to answer*

12. What is your specialization in Fisher/The Ohio State University?
- *a. Finance*
- *b. Accounting*
- *c. Marketing*
- *d. Logistics Management*
- *e. Operations Management*
- *f. Human Resources*
- *g. Information Systems*
- *h. Real Estate*
- *i. International Business*
- *j. Other (text box)*
- *k. Prefer not to answer*

13. What is your current living situation?
- *a. Residence Hall*
- *b. An apartment off-campus*
- *c. A house off-campus*
- *d. Sorority/Fraternity house*
- *e. Living at home (i.e., with relatives)*
- *f. Other (text box)*
- *g. Prefer not to answer*

The eighth and final section of the experiment was a recognition and likability set of three questions pertaining to past usage of each of the three omnichannel distribution methods. If a participant selected that they had used one or more of these methods, then the experiment would jump to a follow-up question pertaining to how much they enjoy using this form of delivery. If they had selected “No”, there would be no follow-up question. The following are the questions presented in all distributions of the experiment:

14. Have you used BOPS (Buy Online Pickup In-Store) in real life/past purchase?

a. *Yes*

(Q14B) If yes: How much do you like using BOPS? (Scale 1-5 from Dislike Extremely to Like Extremely)

b. *No*

15. Have you used Curbside Pickup in real life/past purchase?

a. *Yes*

(Q15B) If yes: How much do you like using Curbside Pickup? (Scale 1-5 from Dislike Extremely to Like Extremely)

b. *No*

16. Have you used At-Home Delivery in real life/past purchase?

a. *Yes*

(Q16B) If yes: How much do you like using At-Home Delivery? (Scale 1-5 from Dislike Extremely to Like Extremely)

b. *No*

Results

Response Data per Condition

The experiment was distributed to 503 students of an Introduction to Logistics Management class in autumn 2020. The six manipulations were divided evenly between alphabetically segmented students willing to participate, before any of the 312 responses came through. This experiment was offered to students as a choice for credit for class engagement but was not mandatory nor perceived as extra credit; there were no negative repercussions in the course for not responding. Responses were filtered in Excel to delete 51 data sequences that were considered incomplete. The goal was for each condition to have at least 30 responses, and this was achieved with a final subject count of 261 students. Below is the table which breaks down the gender demographic results for each manipulation.

Condition Name	Total Responses (261 total)	Men (146 total)	Women (101 total)	Other (14 total)
Free Shipping (E1)	41 (16%)	21 (52%)	17 (42%)	3 (6%)
Shipping Fee (E2)	47 (18%)	31 (66%)	15 (32%)	1 (2%)
Curbside, Fast Pass (E3)	38 (15%)	21 (55%)	14 (37%)	3 (8%)
Curbside, No Fast Pass (E4)	46 (17%)	26 (57%)	19 (41%)	1 (2%)
BOPS, In-Store Offer (E5)	48 (18%)	23 (48%)	24 (50%)	1 (2%)
BOPS, Online Offer (E6)	41 (16%)	24 (59%)	12 (30%)	5 (11%)

Table 2: Breakdown of Respondents by Gender

Results and Discussions

Subjects did not answer in the hypothesized pattern for each predicted action. It was hypothesized that all respondents would have a higher likeliness to cross-buy when there was a perceived benefit of free shipping. It was also hypothesized that those participants who consider themselves “high impulse shoppers” would have a higher propensity to cross buy compared to

"low impulse shoppers". Both Hypothesis 1 and Hypothesis 4 produced highly significant results, as discussed below.

Hypothesis 2 predicted that participants would be more likely to cross-buy when there was a perceived benefit of time with a service, which in this vignette was the curbside pickup. Additionally, it was anticipated with Hypothesis 3that participants would be more likely to cross-buy using buy online pickup in-store (BOPS) when they were given the opportunity to interact with the specified product. Finally, it was predicted with Hypothesis 4 that female participants would be more likely to cross-buy overall compared to their male counterparts. Hypotheses 2, 3, and 5 were not statistically significant and are discussed in the following sections.

Gender Differences

Across all six experimental manipulations, the ratio of male to female respondents is, respectively, roughly 55% and 40%. This ratio is aligned with the current ratio within the Fisher College of Business undergraduate student body, which has a 60:40 male to female ratio. Hypothesis 5 was directed at exploring the relationship between gender and cross-buying. Although prior research indicated that females have more impulsive tendencies than men, the results of the experiment did not provide supportive evidence to back this claim. Looking at question one, "On a scale from 0-10, how likely are you to purchase the baseball hat with your sweatshirt?", the calculated p-value was 0.71, indicating that there was no significant difference between the male and female propensity to cross-buy, as shown in Table 4.

Females also reported a higher tendency to make purchases beyond what they intended to buy, both online and in-store, based on the results from survey question 8. On a scale from 1-10, females averaged 6.31 and 6.26 for how often they make purchases beyond what was intended in-store and online, respectively. Male participants averaged responses of 5.28 and 4.54 for the

same questions. For the last part of question 8, which asks, *"When I think about how I shop, I buy more than what is on my list",* 65% of female respondents responded with "True of Me" or "Very True of Me", whereas only 28% of male respondents did the same. This data is expanded upon in Table 5.

The Effect of a Perceived Benefit

Hypotheses 1 and 2 examined the impact of a perceived benefit and a participant's propensity to cross-buy. To restate, Hypothesis 1 is examining *College-aged consumers are more likely to cross-buy when the purchase also enables them to gain free shipping*. Hypothesis 2 is *College-aged consumers are more likely to cross-buy when the purchase also enables them to gain a time-saving service.* The first implied benefit was that of a money-saving service, which was presented as a shipping fee manipulation in experiment 2, where the participant was told they could reach a free shipping threshold if they purchased the baseball hat; otherwise, they would be paying a $10 shipping fee. This was tested against the results from experiment 1, where the participant would receive free shipping regardless of whether or not they purchased the baseball hat. The second implied benefit was that of a time-saving service, which was presented as the curbside pickup, "fast pass" not included manipulation in experiment four. In this manipulation, the participant was told their order would be available for pickup in 1-3 days with an additional waiting period at the store. Once again, there was the option to reach a threshold by purchasing the baseball hat which would allow the participant to pick up their order faster and at a time they specify via a "fast pass". This was tested against the results from experiment 3, where the participant was told they already had the "fast pass" and could pick up the order at their leisure.

The results from the t-test conducted on experiment 1 (Free Shipping Manipulation) vs. experiment 2 (Shipping Fee Manipulation) produced statistically significant results with a p-value of 0.001 using an alpha of 0.05. This data is represented in Table 6. Additionally, the average response to the question, *"On a scale from 0-10, how likely are you to purchase the baseball hat with your sweatshirt?"* was higher with experiment 2, at 5.88 vs. 3.90 as the mean for experiment 1. This result indicates that college-aged consumers are more likely to cross-buy under the perception of a monetary benefit, even when the overall purchase price of including the baseball hat would be more expensive than paying the cost of shipping. Therefore, the null hypothesis is rejected.

The results from the t-test conducted on experiment 3 (Curbside Pickup, Fast Pass Included) vs. experiment 4 (Curbside Pickup, Fast Pass Not Included) did not produce a statistically significant p-value, indicated in Table 7. The mean for experiment 3 is 3.63 and the mean for experiment 4 is 3.27. As a result, there is not supportive evidence to conclude that a potential time-service benefit would increase a consumer's propensity to cross-buy, and the null hypothesis is accepted.

Tangibility and Cross-Buying

Hypothesis 3 focused on the impact of tangibility and information surrounding product availability. The explored claim behind Hypothesis 3 was *College-aged consumers are more likely to cross-buy when the purchase also enables them to interact with the product versus only seeing it online*. Experiments 5 and 6 presented the vignette scenarios where participants would be required to go and pick up their order inside the store. The difference between these two experiments is the presentation of the cross-buying offer. For experiment 5, once the participant

arrived at the store, they observed a hat they have been wanting to buy near the pickup point, and if they bought it there, they would receive $5 off their purchase. For experiment 6, the customer was told they could add the hat to the cart before finalizing their order and would still pickup both items at the store. It was hypothesized that college-aged consumers would be more likely to cross-buy given the environment of experiment 5 because its enables interaction with the potential additional purchase item.

After conducting a t-test, it was found that Hypothesis 3 did not produce a significant p-value, indicated in Table 8. However, the mean for BOPS, In-store pickup (4.93) was higher than BOPS, online pickup (4.56). As a result, there is not enough supporting evidence to conclude having the opportunity to purchase another product of interest while in a store creates a higher propensity to cross-buy versus purchasing the same product of interest online. Therefore, the null hypothesis is accepted.

High Impulse vs. Low Impulse

Hypothesis 4 is centered around the fact that consumers who are classified as high impulse will be more likely to cross-buy in a shopping scenario than those who are classified as low impulse. High impulse participants were those who replied with *Very True of Me* or *True of Me* to question 8-3, and low impulse participants were those who replied, *Very Untrue of Me* or *Untrue of Me*. The results from the t-test indicated that this hypothesis is highly significant with a p-value of 0.008 at an alpha of 0.05, demonstrated in Table 9. The mean response to question one for high impulse participants was 4.8, whereas the mean for low impulse participants was 3.67. Therefore, there is supporting evidence to conclude that higher impulse college-aged students have a higher propensity to cross-buy and to reject the null hypothesis. This is not a

surprising result, as those students who are guided by emotional reactions and impulsive behavior will be more susceptible to advertisements, displays, and implied deals or discounts, therefore increasing the probability of cross-buying a product of interest.

Shopper Profile Categorization

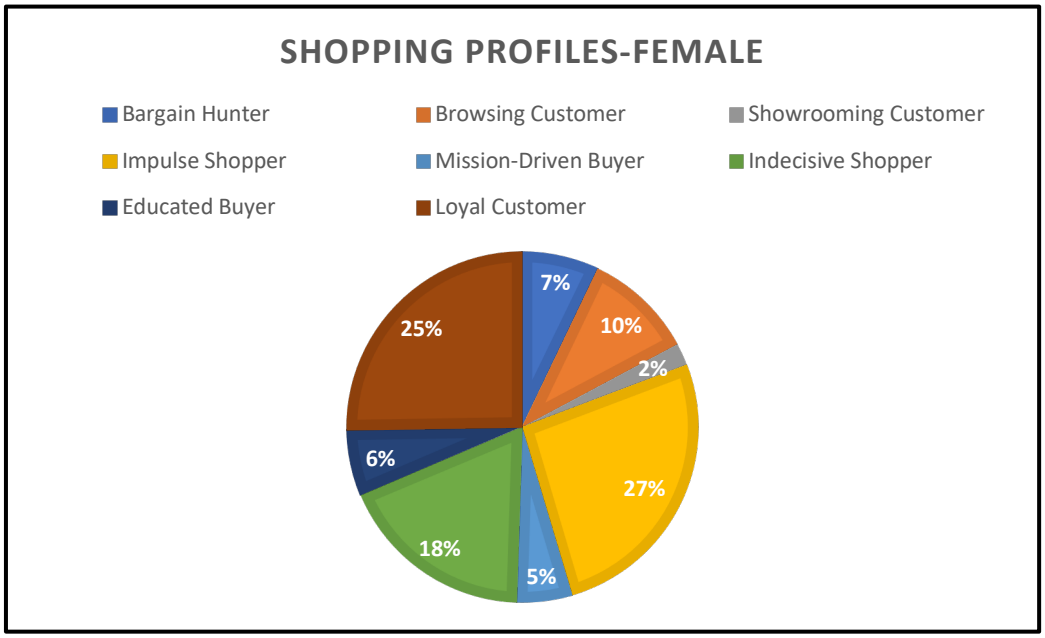

Figure 1: Shopping Profile Breakdown for Females

The breakdown of shopping profile selections for female participants demonstrated three prominent categorizations. 27% of female participants considered themselves to be impulse shoppers, meaning they are likely to make unplanned purchases that catch their attention in the moment. 25% of female participants classified themselves as loyal customers, implying they are very particular to one type of store and frequently return there. Finally, the third most prominent response was that of an indecisive shopper at 18% of participants, meaning they are looking to make a purchase of a product, but are lacking the information to be confident in the purchase. Because two of the highest shopper profile categorizations for females are impulse and

indecisive shoppers, it is likely to conclude that females can be more easily persuaded to purchase more than they originally intended. This would be especially true of the proportion who consider themselves to be loyal customers. Because the female customer already trusts the store they consistently return too, they are more likely to respond to new discounts, advertisements, or employee recommendations.

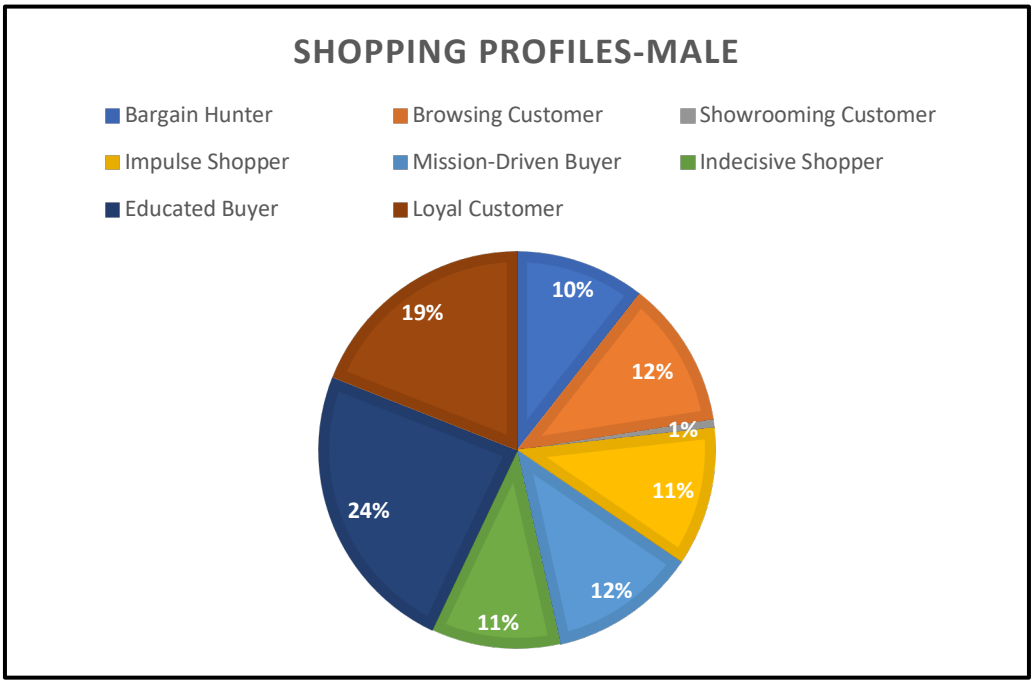

Figure 2: Shopping Profile Breakdown for Males

The breakdown of shopping profiles for male participants did not have as much of a distinguished split between responses and demonstrated two prominent categories. The first, which differed from female participants, was educated buyer, receiving 24% of responses. This signifies that these shoppers know what they want to buy and gather their knowledge through reading reviews and conducting research. The second highest response category was loyal customer, which matches the placing of female participants. The remaining male response breakdowns were mainly in the 10-12% share range. Based on prior research regarding differences in impulse among males and females, it is not surprising that most male college-aged

consumers consider themselves to be educated buyers. Previous research shoes that males typically do not give as much consideration towards shopping as women, so the less divisive split across categories is in alignment with the general conclusion that they do not exert as much time and energy to making purchases.

Impact of Prior Usage & Awareness

Although hypotheses 2 and 3 were not significant, a post hoc analysis was considered as a way to see if prior awareness was a confounding variable in both BOPS and curbside pickup. This was due to the relatively new nature of these fulfillment methods and could address the fact that this demographic likely does not have as much exposure compared to at-home delivery. A second t-test was conducted to see if those participants who had used the omnichannel fulfillment channel before would have a higher propensity to cross-buy. Data from the question one was analyzed again, but only to those participants who answered "Yes" on question 14 or 16, which asked if they had used BOPS or curbside pickup previously. Neither of the additional t-tests produced p-values that indicated significance, but there were changes in the means that may indicate some slight differences (which may be more pronounced with a larger sample size), as highlighted in Table 10 and Table 11. For hypothesis 2, the means for curbside with a fast pass and without both decreased, calculated as 3.33 and 2.74, respectively. For hypothesis 3, the means for BOPS, in-store and BOPS online both increased, calculated at 4.93 and 4.69. It should be noted that the sample size did shrink considerably and therefore limits the application of this calculation.

Motivators to Buy Additional Products Online & In-Store

Subjects were asked the motivators that prompt them to buy more than what they intended for both online and in a brick-and-mortar location. This question was posed as a free response question and analyzed with a free online word cloud website, which populates the cloud with the most frequent responses. Both the results from the online and in-store word clouds are inserted below, with in-store showcasing a focus on the sensory aspect and online focusing on cost.

Figure 3: Cross-Buying In-Store Word Cloud

The world cloud above is assembled from responses to the question, "*What prompts you to make additional purchases in-store?*". Initial hypotheses suggested that tangibility and the overall in-person experience would be key drivers in persuading consumers to cross-buy while

in-store. Among the responses, the frequency of qualities mentioned such as, “unique or eye-catching displays” (26%), “good deals/discounts” (26%), “impulse” (14%), “being able to touch a product” (12%), “convenience” (6%), “being close to checkout” (5%), and “employee recommendations” (2%) were frequent (with some overlapping responses), which supports these hypotheses. When in a brick-and-mortar location, it is much easier for consumers to physically review a product before they purchase it, which increases the likelihood of buying more than intended. Additionally, although sales or discounts are highly influential tactics for cross-buying, it is critical to invest heavily in well-trained staff and strategically positioned merchandise in order to improve the propensity to cross-buy products of interest.

Figure 4: Cross-Buying Online

The word cloud in Figure 4 is assembled from responses to the question, “*What prompts you to make additional purchases online?”*. Initial hypotheses suggested that cost incentive

systems and advertising methods would be key drivers in persuading consumers to cross-buy online. Among the responses, frequency of considerations such as, “better deals or discounts” (40%), “free shipping” (18%), “targeted recommendations” (17%), “a strong want or need” (17%), and “convenience” (6%) suggest that when shopping online, consumers are much more likely to cross-buy when it will help to reach a certain threshold, such as spending a certain amount of money to reach free shipping. Additionally, the use of predictive analytics, which has been made popular by Amazon, is another key driver for propensity to cross-buy, as it shows related items to a consumer, much like convenient displays in a brick-and-mortar location. Visual monetary incentives are the key consideration among online shopping and its relationship to cross-buying.

Conclusions

The results of this research can be translated into recommendations for managers to better address the needs of a college-aged population and allocate their resources into logistics omnichannel fulfillment strategies that will generate more sales and repeat customers. The data from these experiments has shown that college-aged subjects are comfortable potentially spending more money through omnichannel fulfillment strategies they are extremely familiar with. Gender plays a role in buying behavior as well, whether that be self-categorization as a shopper profile or purchasing more than their initial intention. Most subjects found that deals/discounts, the ability to touch a product of interest, a strong impulse feeling, and targeted recommendations or advertisements were the best ways to encourage cross-buying. Managerial solutions and implications to these findings are discussed below.

Logistics Omnichannel Fulfillment Attributes

Based on the results from question 20 for experiment four, which asked the follow-up question of whether or not participants would purchase the elite membership options, it can be concluded that college-aged consumers do not value a time-saving service as highly as other logistics attributes. This is not a shocking result, as this demographic typically has less disposable income and more free time, therefore they would rather select and option that would result in money savings. 70% of responses to this question, which asked participants to rate their likeliness on a scale from 0-10, were a ranking of 5 or below. This could be attributed to the fact that out of the 84 participants who received the curbside pickup manipulations, only 54% of them had any prior experience with this logistics omnichannel fulfillment method. For college-aged students to value the gain of saving time through bypassing a longer line, this may require

more time to develop usage of curbside pickup. Alternatively, further research may indicate that this specific population is not a target for wanting to save time, but actually cares more about cost and tangibility values.

Based on the results from the at-home delivery manipulations, it is clear that consumers are willing to pay more to reach a threshold that would allow them to receive free shipping. However, the chances of cross-buying in order to meet the threshold are higher when there has been expressed prior interest for an item or it comes heavily recommended through tactics such as algorithms or word-of-mouth.

Tangibility of a product and the idea of visible availability is inconclusive as an important attribute. The results of the t-test did not produce significant results; however, this once again may be due to unfamiliarity with BOPS. Out of the 89 participants in the BOPS manipulations, 69% of respondents had used this omnichannel fulfillment before. However, the results from the free response word cloud had recurring themes of tangibility and being able to see the product up close as contributing reasons to cross-buy in-store.

Managerial Implications

Taking a look at the collected data**,** there are several areas that could be considered from a managerial perspective with regards to how to better cater to a college-aged demographic. First, when consumers are more familiar with an omnichannel fulfillment strategy, they respond better to changes from the retailer. For BOPS and curbside pickup, the inclination to choose these options may take more time, as well as any responsiveness to potential deals or promotions. If this experiment were conducted later, the results and familiarity with these two fulfilment options may be increased, as COVID-19 had forced stores to operate primarily as

curbside pickup for many months. However, many consumers turned to at-home delivery more due to fear of leaving their house or of having contact, even limited at curbside, with store employees (Alcantara 2020). Regardless, in a retail world that becomes more dominated by quick and low-cost shipping, those retailers that want to drive store traffic must provide incentives that match or exceed the benefits of shipping to a home.

If a manager is looking to boost online sales, a strategic tactic would be to focus more on creating a tangible aspect for the customer. Meaning, retailers must create an environment where the customer feels like they are getting a sense of how the product feels or looks up close without actually stepping foot in a store. What already wins over customers is the promise of free shipping or the opportunity to gain it. However, increasing the virtual tangibility of a product helps improve customer experience and could lead to additional trust from the consumer. This improved trust could further lead to willingness to cross-buy or make recurring purchases. Additionally, if a customer chooses to partake in BOPS or curbside pickup, it is important to create more ways for the customer to come into contact with potential cross-buys. Participants in this survey with the BOPS manipulation were more likely to cross-buy when the baseball hat was presented in-store than those who only saw the hat for sale online. Therefore, it could be valuable for managers to place strategic items next to the in-store pickup location.

When considering the shopper profiles of both male and female consumers, a common trend is the need for ample product and shopping experience information. Male participants ranked themselves frequently as educated buyers, meaning they conduct research before committing to a purchase. Female participants ranked themselves frequently as indecisive shoppers, meaning they know they want to buy a product but are lacking convincing information to commit to the purchase. Therefore, as managers supplying descriptive product information

and benefits, as well as overall store operations transparency will be crucial in gaining the retained trust of male and female shoppers.

It is evident that college-aged consumers value cost, familiarity, and convenience above other logistics attributes, based on the results from t-tests and the analysis of free text responses. For retailers who operate as an omnichannel environment, there are pros and cons to servicing customers in both an online and in-store setting. As this research has shown, one of the strongest encouragers of cross-buying behavior within a college-aged demographic is the idea of gaining the free shipping benefit and receiving the convenience of your order being delivered to you. However, consumers still enjoy making trips to the store for the experience and the ability to touch and see potential purchases. It is up to managers to decide how to best balance the interests of these consumers.

Future Research

Limitations of this Research

The biggest limitation of this research is that it tests hypothetical behavior in a simulated setting. This implies that testing this type of action may not be fully translatable to real life behavior and thought processes. While the methodology was formatted to represent a logical scenario, there are still many factors that were not accounted for or assumed negligible, which could alter the outcome.

An additional limitation is that the subjects of the experiment were only within the Fisher College of Business and the BUSML 3380 Introduction to Logistics class. Therefore, this sample may have a level of knowledge about omnichannel and have bias towards the logistics attributes which does not make them an apt representative sample for the college-aged student population. Students who are pursuing different specializations of study may perceive this vignette differently and act on different values and strategies.

The gender and age breakdown of this sample do match that of the Fisher College of Business, but once again this is not necessarily true of the college-aged demographic. The age of participants is predominantly 19-22 years old, which matches an undergraduate pool, but does not include those who are pursuing education further, such as master's degrees or doctorates.

Direction for Future Research

This research has several directions for future research. First, there is the question of what would happen if the participant was not told they had prior interest in the baseball hat and they were seeing the proposed cross-buying product for the first time. Furthermore, there are other ways to manipulate the experiment, such as the proposed cross-buy being a smaller item, such as

a pack of gum or bottle of soda. This could further explore how the cost of a product impacts the propensity to cross-buy.

An additional direction for future research would be to examine the conditions of this experiment in a competitive landscape. The manipulations and set up would be mostly the same, but there would be the element of analyzing how different stores could influence cross-buying. This could include, but is not limited to, the effect of brand preferences, the impact of distance and proximity, and pricing differences.

A third direction would be to test this experiment with subjects being either older or younger than a college-aged demographic, depending on the data preferences of a given firm. This may change the familiarity with the different omnichannel fulfillment methods as well as the ranking of importance of the different logistics attributes. Additionally, those older than a college-aged demographic who live in different living environments (i.e., suburbs vs. city) would likely differ in the patterns of responses as well.

A final direction for future research would be to look at the logistics attributes of cost, time, and interaction together to see the overall order of importance among college-aged consumers. For this research, these attributes were examined individually and with the connection of the three omnichannel fulfillment methods. However, this does not necessarily account for the direct comparison of the three logistics activities.

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t-Test: Two-Sample Assuming Unequal Variances		
	Female	*Male*
Mean	4.536	4.397
Variance	7.960	8.108
Observations	97	136
Hypothesized Mean Difference	0	
df	208	
t Stat	0.369	
P(T<=t) one-tail	0.356	
t Critical one-tail	1.652	
P(T<=t) two-tail	0.712	
t Critical two-tail	1.971	

Table 4: T-Test for Hypothesis Five

Question 8-1: When I think about how I shop, I tend to do a lot of in-store shopping												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**
Very Untrue of Me	0	0	0	0	2	0	4	1	0	0	2	0
Untrue of Me	3	4	7	2	4	1	5	2	8	2	6	1
Neutral	10	5	15	4	7	3	8	10	8	6	5	5
True of Me	6	6	5	6	6	7	8	4	6	10	11	5
Very True of Me	1	3	4	3	2	3	1	2	1	6	0	1

Question 8-2: When I think about how I shop, I tend to do a lot of online shopping												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**
Very Untrue of Me	1	0	0	0	2	0	0	0	0	0	1	0
Untrue of Me	1	2	1	2	4	1	1	1	1	3	2	0
Neutral	9	5	11	3	7	3	7	6	7	4	3	3
True of Me	9	5	11	6	6	7	14	12	8	10	14	4
Very True of Me	0	6	8	4	2	3	4	10	7	7	4	5

Question 8-3: When I think about how I shop, I tend to buy more than what is on my list												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**	**Male Count**	**Female Count**
Very Untrue of Me	2	1	2	0	2	0	2	0	2	0	2	0
Untrue of Me	6	4	5	3	6	2	9	3	8	4	7	0
Neutral	7	5	13	1	8	3	11	4	5	2	8	3
True of Me	5	4	7	7	2	5	2	10	6	13	5	8
Very True of Me	0	4	4	4	3	4	2	2	2	5	2	0

Table 5: Shopping Behavior Classification by Gender

t-Test: Two-Sample Assuming Unequal Variances		
	Free Shipping	*Shipping Fee*
Mean	3.897	5.884
Variance	8.305	7.248
Observations	39	43
Hypothesized Mean Difference	0	
df	78	
t Stat	-3.2158	
P(T<=t) one-tail	0.0009	
t Critical one-tail	1.6646	
P(T<=t) two-tail	0.0019	
t Critical two-tail	1.9908	

Table 6: T-Test for Hypothesis One

t-Test: Two-Sample Assuming Unequal Variances		
	Curb, FP	*Curb, NFP*
Mean	3.629	3.267
Variance	7.770	7.064
Observations	35	45
Hypothesized Mean Difference	0	
df	71	
t Stat	0.588	
P(T<=t) one-tail	0.279	
t Critical one-tail	1.667	
P(T<=t) two-tail	0.558	
t Critical two-tail	1.994	

Table 7: T-Test for Hypothesis Two

t-Test: Two-Sample Assuming Unequal Variances		
	BOPS, In-Store	*BOPS, Online*
Mean	4.932	4.575
Variance	7.600	7.020
Observations	44	40
Hypothesized Mean Difference	0	
df	82	
t Stat	0.605	
P(T<=t) one-tail	0.274	
t Critical one-tail	1.664	
P(T<=t) two-tail	0.547	
t Critical two-tail	1.989	

Table 8: T-Test for Hypothesis Three

t-Test: Two-Sample Assuming Unequal Variances		
	High Impulse	*Low Impulse*
Mean	4.800	3.671
Variance	8.308	7.585
Observations	110	73
Hypothesized Mean Difference	0	
df	159	
t Stat	2.665	
P(T<=t) one-tail	0.004	
t Critical one-tail	1.654	
P(T<=t) two-tail	0.008	
t Critical two-tail	1.975	

Table 9: T-Test for Hypothesis Four

t-Test: Two-Sample Assuming Unequal Variances		
	Used Curbside, FP	*Used Curbside, NFP*
Mean	3.333	2.739
Variance	10.000	5.565
Observations	18	23
Hypothesized Mean Difference	0	
df	31	
t Stat	0.665	
P(T<=t) one-tail	0.255	
t Critical one-tail	1.696	
P(T<=t) two-tail	0.511	
t Critical two-tail	2.040	

Table 10: T-Test for Hypothesis Two, Only Those Who Have Used Curbside

t-Test: Two-Sample Assuming Unequal Variances		
	Used BOPS, In-Store	*Used BOPS, Online*
Mean	4.931	4.690
Variance	8.781	6.222
Observations	29	29
Hypothesized Mean Difference	0	
df	54	
t Stat	0.336	
P(T<=t) one-tail	0.369	
t Critical one-tail	1.674	
P(T<=t) two-tail	0.738	
t Critical two-tail	2.005	

Table 11: T-Test for Hypothesis Three, Only Those Who Have Used BOPS

Question 1: On a scale of 0-10, how likely are you to purchase the baseball hat with your sweatshirt?												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**
0	26	26	16	32	21	24	25	31	26	25	19	29
1	0	1	1	1	2	2	1	2	1	1	3	0
2	1	0	1	1	2	3	6	3	4	5	5	3
3	4	4	6	1	3	0	4	2	3	2	3	2
4	2	1	1	1	1	2	0	2	0	1	0	0
5	3	1	3	2	2	2	2	2	1	0	4	1
6	2	3	2	1	2	1	3	1	2	5	5	0
7	0	3	5	1	1	1	1	1	5	3	3	4
8	2	2	3	3	1	1	4	1	1	3	0	0
9	0	0	3	1	1	0	0	0	2	2	0	1
10	1	0	2	2	0	1	0	0	0	0	0	0
Question 2: On a scale of 1-10, how often do you make additional purchases beyond what you intended to buy ONLINE?												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**
1	1	1	1	0	1	0	1	0	1	0	2	0
2	2	0	4	1	2	1	3	2	3	3	3	0
3	1	1	3	3	5	2	4	2	8	0	3	2
4	3	1	0	0	3	0	3	1	2	0	2	1
5	5	4	5	1	0	2	5	0	2	3	2	0
6	5	4	8	3	7	3	5	4	1	5	5	3

7	0	1	6	2	0	4	1	5	2	5	5	2
8	0	3	1	2	3	1	1	3	1	2	0	3
9	1	1	1	1	0	1	0	1	1	1	1	1
10	0	1	1	2	0	0	1	1	1	3	0	0
Question 3: On a scale of 1-10, how often do you make additional purchases beyond what you intended to buy IN-STORE?												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**	**Male Response**	**Female Response**
1	1	0	1	0	0	0	0	1	2	0	1	0
2	0	2	1	2	1	0	3	1	1	2	1	0
3	5	1	7	1	2	1	4	2	3	0	4	1
4	2	1	2	1	2	2	2	1	1	2	3	0
5	3	1	9	1	5	2	1	3	4	3	4	6
6	0	1	5	1	2	2	8	5	3	2	3	3
7	3	5	3	3	3	3	7	1	5	7	3	1
8	5	3	0	2	2	1	0	3	2	5	3	1
9	0	2	1	2	0	1	1	1	1	2	0	0
10	0	2	1	2	2	1	0	1	0	1	2	

Table 12: Cross-Buying Questions Breakdown by Gender

Question 9: You will now read a brief definition of 8 types of shopper profiles. Please select one option that relates best with you.												
Condition	**Free Shipping**		**Shipping Fee**		**Curbside, Fast Pass Included**		**Curbside, Fast Pass Not Included**		**BOPS, In-Store Offer**		**BOPS, Online Offer**	
Scale	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Bargain Hunter	2	1	3	1	3	1	1	1	5	3	1	0
Browsing Customer	1	3	4	1	1	1	4	3	2	2	5	0
Showrooming Customer	1	0	0	1	0	0	0	1	0	0	0	0
Impulse Shopper	3	1	4	7	2	3	3	2	1	10	3	3
Mission-Driven Buyer	0	0	3	3	4	0	0	0	6	1	4	1
Indecisive Shopper	1	3	4	0	3	6	0	0	2	5	5	4
Educated Buyer	5	2	10	0	7	1	0	0	6	0	6	3
Loyal Customer	6	6	2	2	0	1	18	12	1	3	0	1

Table 13: Shopper Profile Breakdown by Gender

Question 14: Have you used BOPS (Buy Online Pickup In-Store) in real life/past purchases?						
Condition	**Free Shipping**	**Shipping Fee**	**Curbside, Fast Pass Included**	**Curbside, Fast Pass Not Included**	**BOPS, In-Store Offer**	**BOPS, Online Offer**
Yes	29	33	22	36	31	30
No	12	14	16	10	17	11
Question 16: Have you used Curbside Pickup in real life/past purchases?						
Condition	**Free Shipping**	**Shipping Fee**	**Curbside, Fast Pass Included**	**Curbside, Fast Pass Not Included**	**BOPS, In-Store Offer**	**BOPS, Online Offer**
Yes	21	32	21	24	34	28
No	20	15	17	22	14	13
Question 18: Have you used At-Home Delivery in real life/past purchases?						
Condition	**Free Shipping**	**Shipping Fee**	**Curbside, Fast Pass Included**	**Curbside, Fast Pass Not Included**	**BOPS, In-Store Offer**	**BOPS, Online Offer**
Yes	38	47	34	46	47	39
No	3	0	4	0	1	2

Question 15: How much do you like using BOPS?						
Condition	**Free Shipping**	**Shipping Fee**	**Curbside, Fast Pass Included**	**Curbside, Fast Pass Not Included**	**BOPS, In-Store Offer**	**BOPS, Online Offer**
Dislike Extremely	1	2	2	1	1	1
Dislike Very Much	2	5	4	4	4	5
Neither Like nor Dislike	26	28	20	28	30	23
Like Very Much	9	9	9	8	11	10
Like Extremely	3	3	3	2	2	1

Question 17: How much do you like using Curbside Pickup?						
Condition	**Free Shipping**	**Shipping Fee**	**Curbside, Fast Pass Included**	**Curbside, Fast Pass Not Included**	**BOPS, In-Store Offer**	**BOPS, Online Offer**
Dislike Extremely	1	1	2	1	1	1
Dislike Very Much	4	3	2	4	3	2
Neither Like nor Dislike	22	29	19	29	24	22
Like Very Much	10	9	10	11	15	12
Like Extremely	4	5	5	1	5	3

Question 19: How much do you like using At-Home Delivery?						
Condition	**Free Shipping**	**Shipping Fee**	**Curbside, Fast Pass Included**	**Curbside, Fast Pass Not Included**	**BOPS, In-Store Offer**	**BOPS, Online Offer**
Dislike Extremely	0	0	0	0	0	1
Dislike Very Much	0	1	1	1	1	2
Neither Like nor Dislike	4	7	5	5	5	22
Like Very Much	12	18	10	17	19	12
Like Extremely	24	21	22	23	23	3

Table 14: Prior Ominchannel Usage and Affinity

Question 20 (for Experiment Four only): On a scale from 0-10, how likely are you to purchase the elite membership option?	
Scale	**Count**
0	19
1	5
2	4
3	6
4	2
5	5
6	3
7	0
8	0
9	0
10	1

Table 15: Likeliness to Purchase the "Fast Pass" for Experiment Four

	18 and Under	**19-22**	**23 and Up**
Total	1	243	15
Percent Total	<1%	93%	6%
Age Count			

Table 16: Age Count for Experiment

Condition	Finance	Accounting	Marketing	Logistics/ Operations	HR	Information Systems	International Business	Other
Free Shipping (E1)	18	6	5	4	1	2	1	-
Shipping Fee (E2)	25	10	5	2	-	1	1	1
Curbside, Fast Pass	10	5	8	2	3	3	1	2
Curbside, No Fast Pass	21	4	10	3	2	2	-	3
BOPS, In-Store Offer	17	5	13	4	1	2	1	2
BOPS, Online Offer	14	5	5	8	2	2	-	-
Specialization Count								

Table 17: Fisher Specialization Count per Condition